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A NEW SPECIES OF BAT OF THE GENUS *ANTROZOUS*
FROM CUBA

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Until recently the known range of the vespertilionid genus *Antrozous* has been from southern British Columbia south to Querétaro, México, and from the Pacific coastal states east to Kansas. Within this continental area, in the opinion of present writers, there is a single species, *Antrozous pallidus*.

In 1957 an American Museum of Natural History expedition discovered a population of bats belonging to the genus *Antrozous* on María Magdalena Island of the Tres Mariás group off the coast of Nayarit, México. Study of specimens secured revealed that they represented a distinct new species which was given the name *Antrozous dubiaquercus* by Van Gelder (Amer. Mus. Nov., 1973: 1-14, 1959).

Meanwhile, the existence of a second insular species of *Antrozous* was suspected. While collecting bats with the aid of a mist net north of the mountains of western Cuba in Pinar del Río Province in the fall of 1956 the junior author and Dr. Karl F. Koopman secured a live individual that, as far as external appearance was concerned, appeared to belong to the genus *Antrozous*. Unfortunately the bat escaped the night that it was caught but not before the collectors had several hours in which to examine it closely and be certain of its generic identity.

It was not until December 2, 1958, that further evidence on the existence of *Antrozous* in western Cuba was obtained. On this date one of us (Silva) secured a skull of a nyctophiline bat in a cave in Pinar del Río Province. The skull may have come from a barn owl pellet as there were a number of the latter present in the cave in various stages of decomposition. No



mandibles were found but the skull itself is in an excellent state of preservation. Only the tympanic bullae and parts of the parietals are missing. The sagittal crest is very well developed and the teeth quite worn, indicating an old adult.

On comparing this skull with those of specimens of *Antrozous pallidus* from selected localities throughout its range the specific distinctness of the Cuban specimen was at once apparent. It seems desirable, therefore, to describe this Cuban species even though it is presently known only from a skull.

***Antrozous koopmani*, new species¹**

Type: Skull only, lacking mandibles; No. 11846, Calif. Acad. Sci.; Cueva del Hoyo García, Municipio de San Juan y Martínez, Provincia de Pinar del Río, Cuba, 2 December 1958; found by Gilberto Silva Taboada.

Diagnosis: Size very large compared with that of other members of the genus *Antrozous*; teeth proportionately small; combined temporal and orbital fossae proportionately large as a result of elongation of the cranium rather than the rostrum.

Comparisons and remarks: Five geographic races of *Antrozous pallidus* are recognized. Some of these are well marked subspecies while others are less clearly defined. Size and color are the principal characters used to distinguish these forms. Measurements of four of these five subspecies (all except *A. p. cantwelli*) are shown in Table 1. As will be noted greatest body size is attained in the Pacific coastal area west of the Sierra Nevada-Cascade axis within the range of the subspecies *pacificus*. Specimens from San Luis Obispo and Kern counties of west-central California exhibit maximum size for the species. Specimens from northwestern California in Mendocino, Napa and Lake counties average smaller. Measurements given for *pacificus* by Van Gelder (op. cit., p. 13) for members of this race from eastern Tulare County in California are even smaller. *Antrozous p. cantwelli* of the northern Great Basin region is, reportedly, smaller than *A. p. pacificus*. The same is true of *A. p. bunkerii* known from Kansas and Oklahoma. The minimum in size is attained by *A. p. minor* of southern Baja California and *A. p. pallidus* which occurs in the desert regions of southwestern United States and northern México. In size, therefore, this species follows Bergmann's Rule in a general way.

One of the characters of *Antrozous koopmani*, however, is its large size. Not only do its measurements greatly exceed those of *Antrozous pallidus pallidus* but even those of the largest individuals of the Pacific coastal race *A. p. pacificus* measured by the writers. The shortest distance between the known range of *A. pallidus* and the tip of western Cuba is approximately nine hundred miles most of which is across the Gulf of México.

¹ Named for Dr. Karl F. Koopman who, with the junior author, first discovered the genus *Antrozous* in Cuba and whose studies have contributed much to our knowledge of bats in the West Indies.

TABLE 1.—Cranial measurements, in millimeters, of adult specimens of *Antrozous*.

SPECIES AND LOCALITY (Specimens measured)	GREATEST LENGTH	CONDYLOBASAL LENGTH	ZYGOMATIC BREADTH
<i>Antrozous koopmani</i>			
Cuba (1)	24.3	21.7	14.0
<i>Antrozous pallidus pacificus</i>			
Northern California (28)	21.6 (21.0–22.7)	20.0 (19.2–20.9)	13.2 (12.3–13.9)
South-central California (43)	22.6 (21.9–23.6)	20.9 (20.0–21.7)	13.7 (13.1–14.4)
<i>Antrozous pallidus bunkeri</i>			
Barber County, Kansas (4)	21.8 (21.5–22.3)	20.0 (19.7–20.4)	13.7 (13.4–14.0)
<i>Antrozous pallidus pallidus</i>			
Southern Arizona and New Mexico (12)	19.6 (18.6–20.5)	18.1 (17.3–19.0)	12.3 (11.5–13.2)
Coahuila and Durango, México (5)	20.0 (19.5–20.4)	18.4 (17.9–19.2)	12.3 (12.0–12.6)
<i>Antrozous pallidus minor</i>			
Miraflores, Baja California (2)	20.4 (20.3–20.5)		11.9 (11.5–12.3)

It is possible that the genus *Antrozous* may have arrived in Cuba originally from Yucatan. At present these two areas are separated by about one hundred and twenty-five miles of water. To the best of our knowledge, however, no bats of the genus *Antrozous* have been taken on the Yucatan peninsula nor south of a point five hundred and fifty miles north of the Isthmus of Tehuantepec.

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Specimens examined: A total of 239 from the following localities:

Antrozous pallidus pacificus: CALIFORNIA—Humboldt County, Hoopa Indian Reservation, 8; Miranda, 1; Mendocino County, near Hearst, 3; Lake County, Mirabel Mine, 19; Napa County, ½ mi S Angwin, 1600 ft,

4; Sonoma County, Cloverdale, 3; Marin County, Inverness, 2; San Rafael, 1; Contra Costa County, Pine Canyon, 1; Walnut Creek, 1; Alameda County, Hayward, 1; 7 mi SE Livermore, 1; San Mateo County, Belmont, 3; Santa Clara County, Stanford University, 41; Bell Station, 1; Gilroy, 1; San Joaquin County, Farmington, 3; Tuolumne County, Long Barn, 1; San Luis Obispo County, 4½ mi NE Shandon, 44; Shandon, 5; 9 mi W Simmler, 1; Kern County, 2½ mi NW Carneros Spring, 21; Carneros Spring, 2; Wheeler Ridge, 600 ft, 2; Lebec, 5; Ft. Tejon, 3; Los Angeles County, 1 mi S Lankershim, 2; Pasadena, 1; Sierra Madre, 5. Total 186.

Antrozous pallidus pallidus: CALIFORNIA—Inyo County, Coso Mountains, 2; ARIZONA—Yavapai County, Camp Verde, 19; Gila County, White Mountains, 1; Gila Mountains, Tinajas Altas, 4; Pima County, Santa Catalina Mountains, 1; Santa Cruz County, 7 mi N Patagonia, 4700 ft, 4; UTAH—Millard County, Desert Range Experimental Station, 1; NEW MEXICO—Bernalillo County, Carasal, 1; Dona Ana County, Las Cruces, 3800 ft, 3; TEXAS—Brewster County, Chisos Mountains, Kibee Springs, 5700 ft, 1; MÉXICO, COAHUILA—San Pedro, 1; Jaral, 1; Los Delicias, 2; DURANGO—10 mi S Lerdo, 4500 ft, 2. Total 43.

Antrozous pallidus minor: MÉXICO, BAJA CALIFORNIA—Miraflores, 2. Total 2.

Antrozous pallidus bunkerii: KANSAS—Barber County, 5½ mi S Sun City, 5; 7 mi S Sun City, 2. Total 7.

Antrozous koopmani: CUBA, PROVINCIA DE PINAR DEL RIO—Municipio de San Juan y Martínez, Cueva del Hoyo García, 1.